

REMARKS/ARGUMENTS

Favorable reconsideration of this application is requested.

Claims 1, 2 and 4-19 are in the case.

Claims 7 and 11 stand rejected under 35 U.S.C. § 102(b) or §103(a) over Nakagawa et al.

Claims 1, and 4-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Britchard.

The invention relates to a process comprising a thermal treatment of sodium percarbonate immediately following a drying step subsequent to a production process of sodium percarbonate wherein the thermal treatment is performed for a time of at least 2 minutes at a temperature from 80 to 95°C without adding a coating agent, while maintaining the active oxygen content virtually constant, and ambient air surrounding the sodium percarbonate is continuously replaced. The present invention provides for sodium percarbonate with improved internal stability and storage stability.

Sodium percarbonate has a tendency to readily lose oxygen. Interaction of sodium percarbonate with moisture and other components, such as transition elements, leads to degradation of the peroxide within sodium percarbonate and release of the active oxygen. Water is a decomposition product, and consequently, can catalyze further decomposition of sodium percarbonate. Such circumstances are accelerated when sodium percarbonate is in contact with a moisture atmosphere and/or with mixtures of active components, which can commonly arise in washing and cleaning agents. The invention provides a process whereby the internal stability of sodium percarbonate can be improved compared to that achieved within the scope of a conventional production process, including conventional drying process. Due to the claimed treatment step under specific conditions as recited in the claims,

unobviously superior results are obtained, as is so evident from the results set forth in Table 1 at page 12 of the specification, reproduced below.

Table 1:

| No. | T (°C) | Oa (%) | Weight Loss (%) (IR Balance) | TAM Value (μ W/g) |
|-------|--------|--------|---------------------------------|------------------------|
| Start | | 13.7 | 1.3 | 10.6 |
| 1 | 80 | 13.7 | 1.0 | 9.3 |
| 2 | 85 | 13.7 | 0.8 | 8.1 |
| 3 | 90 | 13.6 | 1.0 | 7.3 |
| 4 | 95 | 13.5 | 1.1 | 6.3 |
| 5 | 100 | 13.0 | 1.5 | 4.8 |

As is apparent from the results set forth in the above reproduced table, a reduction of the TAM-value, a desired result, and a constant active oxygen content is achieved by carrying out the process under the claimed conditions.

The Examiner asserts that the thermal treatment of sodium percarbonate by Nakagawa et al. at 110-135°C and a heating time of 5-30 minutes (column 1, lines 33-34) would be expected to produce an equivalent product, no substantial difference between the process of Nakagawa et al. and that of the instantly claimed invention being present.

Such reasoning clearly is refuted even by the reference itself. Thus, in its Example 1 the sodium percarbonate subjected to treatment has an available oxygen content of 13.9%. Note column 2, lines 41-42. As so shown in Table 1 bridging columns 3 and 4 of this reference, the available oxygen content significantly decreases upon thermal treatment, the temperature of the thermal treatment being significantly higher than as claimed.

Further, in addition to the thermal treatment in Nakagawa et al. being at a higher temperature, ambient air surrounding the sodium percarbonate is not continuously replaced, as required by the claims. Nor does the thermal treatment in Nakagawa et al. necessarily follow immediately following a drying step, as so also required by the claims. How then can it reasonably be said that the claimed invention is anticipated by or even obvious from Nakagawa et al.? Manifestly, such is not a reasonable conclusion.

With regard to the rejection of the claims over Britchard, this rejection similarly clearly is not well taken. Britchard relates to a process for the stabilization of particles containing peroxygen compounds by coating using coating agents that are insoluble in water and melt at low temperatures, such as waxes. The claimed process wherein the thermal treatment is of sodium percarbonate without adding a coating agent, not in a process for coating sodium carbonate, as in Britchard, manifestly is not suggested thereby nor obvious.

Accordingly, withdrawal of the rejection of the claims under 35 U.S.C. § 102 and §103 is requested.

It is submitted that this application is now in condition for allowance which is solicited.

Respectfully submitted,

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